

Appl. No.: 10/092,675  
Amdt. dated 11/04/2004  
Reply to Office Action of October 4, 2004

### REMARKS/ARGUMENTS

In the final Office Action dated October 4, 2004, Claims 1-18 and 33 are pending, including independent Claims 1 and 9. Both independent claims and various dependent claims are rejected under 35 U.S.C. § 102 as being anticipated by each of U.S. Patent No. 5,740,524 to Krueger, et al.; U.S. Patent No. 6,219,916 to Walker, et al.; U.S. Patent No. 6,524,072 to Brownell, et al.; and U.S. Patent No. 6,669,447 to Norris, et al.

Independent Claims 1 and 9 have been amended to more clearly set forth the invention of the present application. In addition, new dependent Claims 34-37 have been added.

Applicant respectfully submits that none of the cited references teaches or describes a method as set forth in independent Claims 1 and 9 as amended. In particular, Claim 1 now recites a method of constructing a preform for use in forming a machined structural assembly. The method includes selecting first and second structural members based on the dimensions of the machined structural assembly. The structural members include excess material such that at least one of the structural members is larger in at least one dimension than the corresponding dimension of the machined structural assembly. In particular, the selecting step comprises "selecting structural members with a combined mass of at least about twice the mass of the machined structural assembly." Thus, the buy:fly ratio, which compares the mass of the preform to be machined to the mass of the finished machined structural assembly is at least about 2:1. See page 7, lines 11-18.

None of the cited references teaches the use of a preform having at least twice the mass of the finished structural assembly. To the contrary, the cited references teach or suggest, at most, machining a minimal amount of material after welding. For example, Krueger, et al. teaches "that finished rotor blades 8 with their final shapes at their roots can be welded flush with the finished root bases 12." Such a process requires less machining since the blades are finished when welded. However, the relative configuration of the blades is determined by the welding operation, not by the machining operation. That is, the present invention provides an advantage over a method such as that of Krueger, et al., in that the final dimensions of the structural assembly are determined by the machining operation, so that the desired configuration

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can be achieved even if the welding operation does not result in a precise placement of the structural members in the preform. *See* Krueger, et al. at col. 4, lines 28-31. *See also*, Walker, et al. at col. 6, lines 6-12 and Figure 5; Brownell, et al. at col. 1, line 65 – col. 2, line 3.

Similarly, Claim 9, which is directed to a method of forming a machined structural assembly, now recites that the “machining step comprises removing at least about one-half of the mass of the preform such that the structural member has a mass of less than about one-half of the preform.” As set forth above, none of the cited references teaches or suggests such machining. Therefore, Applicant submits that Claim 9 and each of the dependent Claims 10-18, 36-37 are allowable over the cited references. Instead, the prior art suggest welding members that already substantially define finished dimensions.

Further, the dependent claims provide additional bases of distinction over the cited references. For example, Claim 34, which is dependent on Claim 1, recites “selecting at least one of the structural members defining the excess material over an entire exposed surface.” Similarly, Claim 36, which is dependent on Claim 9, recites “removing excess material from an entire exposed surface of at least one of the structural members.” *See* page 10, lines 3-8; Figure 4, 5, 12, 13, reference 3; Figures 8 and 9, references 2, 3, 8. Such a feature is not disclosed in the cited references.

Claim 35, which is dependent on Claim 1, recites “determining a curved contour of the structural member” and “selecting and welding the structural members as rectangular blocks.” Similarly, Claim 37, which is dependent on Claim 9, recites “selecting and welding the structural members as rectangular blocks” and “machining at least one of the structural members to define a curved contour.” *See* page 6, lines 16-17. Applicant respectfully submits that none of the cited references teaches the combination of linear friction welding rectangular blocks to form the preform, and then machining the rectangular blocks to the curved contour of the finished machined structural assembly.

For the foregoing reasons, Applicant respectfully submits that none of the cited references discloses the features of the independent claims as amended. For the foregoing reasons, Applicant submits that all of the pending Claims 1-18 and 33-37 are allowable and therefore the application is in condition for allowance. In the event the Examiner disagrees and

Appl. No.: 10/092,675  
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maintains the rejections set forth in the final Office action, Applicant respectfully requests entry of the above-referenced claim amendments under 37 CFR §1.116(b), as the amendments present the rejected claims in better form for consideration on appeal.

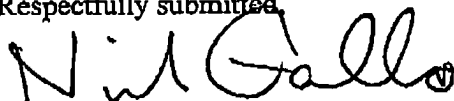
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### CONCLUSIONS

In view of the remarks presented above, Applicant submits that the present application is in condition for allowance. As such, the issuance of a Notice of Allowance is therefore respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicant's undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



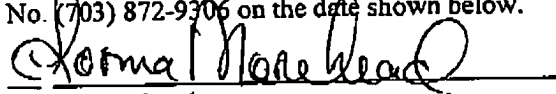
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I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office at Fax No. (703) 872-9306 on the date shown below.

  
Lorna Morehead

November 4, 2004  
Date

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